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NEWS LETTER

BUREAU OF PLANT QUARANTINE

UNITED STATES DEPARTMENT OF AGRICULTURE

Number 29 (NOT FOR PUBLICATION) May 1, 1933.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Fruit fly in grapefruit.--Six living larvae of Anastrepha ludens Loew (orange maggot) were intercepted at Laredo, Tex., in two grapefruit in baggage from Mexico.

Thrips from Germany.--Chirothrips hamatus Tryb. was intercepted at Philadelphia among evergreen cuttings in the mail from Germany. J. R. Watson, of Gainesville, Fla., reports that this thrips is not recorded from the United States.

Aphid on hyacinth bulbs.--Anuraphis tulipae (Boyer) was intercepted at Charleston, S. C., on hyacinth bulbs in quarters from Belgium. This is a European species which has been introduced into this country. It infests iris and tulip above and below ground and continues to feed and breed after the bulbs or rhizomes have been placed in storage.

Bruchid from France.--Bruchidius lividimanus Gyll. (Bruchidae) was intercepted at Washington, D. C., in seeds of Cytisus albus in the mail from France.

Beetle in wood carvings.--Adults of Lichenophanes tristis Fahr. (Bostrichidae) were intercepted at St. Paul, Minn., in wood carvings in the mail from the Union of South Africa.

Whitefly from Japan.--Tetraleurodes aucubae (Kuwana) (Aleyrodidae) was intercepted at San Francisco on Aucuba sp. in quarters from Japan. This whitefly is reported as a pest of citrus in Japan.

Pomegranates infested.--A larva and pupa of Cry toblabes gnidiella Mill. (Pyralidae) were intercepted at Philadelphia in the blossom ends of two pomegranates in the mail from Italy.

European fruit scale on apple.--Aspidiotus ostreaeformis Curt. (Coccidae) was intercepted at New York on apples in cargo from Czechoslovakia. This is a common species on deciduous fruit and ornamental trees in Europe and in the eastern United States.

Lepidopterous larvae in acorns.--Larvae of Laspeyresia sp. (Olethreutidae) were found at Philadelphia in acorns of cork oak (Quercus suber) in cargo from Spain. Laspeyresia sp. has been intercepted previously in acorns from China, Germany, Japan, Portugal, and Turkey.

Weevil in packing material.--Acallocrates denticollis Germ. (Curculionidae) was found at Washington, D. C., in packing about grape cuttings in the mail from Rumania.

Lanternfly on bananas.--Helicoptera longiceps Fowler (Fulgoridae) was intercepted at San Francisco on bananas in cargo from Panama.

Scale insect from Japan.--Lepidosaphes cymbidicola Kuwana (Coccidae) was taken at Honolulu on an orchid (Cymbidium sinense) leaf in cargo from Japan. This coccid was described in 1925 on orchids in Japan. It is the first interception record of this scale insect in our files.

Tobacco budworm in gandul pods and tomato.--Larvae of Heliothis virescens Fab. (Noctuidae) were taken at San Juan, P. R., in gandul or pigeon pea (Cajanus indicus) pods for export in cargo from Puerto Rico to the mainland of the United States. A larva of the same insect was found at New York in a tomato in cargo from Cuba. This budworm is an important tobacco pest especially in the southeastern part of the United States.

Aphid galls from China.--Galls made by Schlechtendalia chinensis Bell (aphid) arrived at Baltimore, Md., in cargo from China. L. H. Weld, of East Falls Church, Va., reports as follows: "This is the Chinese Gall made by a species of plant lice, Schlechtendalia chinensis Bell, on the leaves of a sumac, Rhus semialata Murr."

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Diseased husk tomato.--The disease on a husk tomato from Mexico intercepted at El Paso was tentatively determined as Phoma destructiva. The determination was verified by Mr. Stevenson, of the Bureau of Plant Industry, who checked the spore measurements with the description. Apparently this disease had not been reported as occurring on husk tomato.

Another chayote disease interception.--A chayote from Mexico intercepted at Mobile was found to be infected with Colletotrichum lagenarium. This is the first interception of this disease on chayote.

Tomato disease in Virgin Islands.--A tomato disease collected in the field in St. Croix by inspectors from Puerto Rico has been determined as bacterial spot (Bacterium vesicatorium). This is the first collection of the disease we have had from Virgin Islands.

Pepper disease in Puerto Rico.--Meliola capsicola collected at Adjuntas, P. R., on pepper leaf and stem, was received some time ago but the determination has just been received from J. A. Stevenson, who has been engaged in a study of the genus Meliola for several years.

Diseased cauliflower from France.--Typical fruiting material of Gloeosporium concentricum was found on a cauliflower leaf from France intercepted at Philadelphia. The only previous interception of this disease was on cabbage from England.

Grape from Italy diseased.--A grape cutting from Italy intercepted at New York bore the perfect stage of an ascomycete tentatively identified as Mycosphaerella rathayi (?). We have had no interceptions of a Mycosphaerella on Vitis.

Bacterial leaf spot of citrus from Brazil.--An orange leaf from Brazil intercepted at Baltimore was found to have small blackish spots full of bacteria. While unlike any of the reported diseases of citrus it is possible these spots were the result of infections with the citrus blast organism (Bacterium citrarefaciens).

Nematode in dahlia.--Nematodes in dahlia tubers from Germany intercepted at New York were determined by Dr. Steiner as Aphelenchoides sp. The only previous interception of parasitic nemas on dahlia was A. parietinus on material from France.

Phytophthora of tomato.--Nogales inspectors have been intercepting many diseases on vegetables from Mexico including a species of Phytophthora on tomato. Whether P. parasitica, as some workers believe, or P. mexicana, a species described from Mexican tomatoes but not generally accepted apparently, would be difficult to determine.

Cercospora on Cyrella.--Cercospora sp. was found on leaves of Cyrella racemiflora from England intercepted at the inspection house in Washington. Apparently this is the first report of a Cercospora on Cyrella.

Disease of birch leaves.--A disease of Betula (alba ?) leaves from England intercepted at Washington, D. C., in packing was found to be due to Gnomonia setaceae.

Tylenchus dipsaci in potatoes.--Mobile has added Norway to the list of countries from which we have intercepted Tylenchus dipsaci in potatoes. More interceptions of this disease are being made this year than ever before. The first interception of T. dipsaci in potato was made in January 1930. During the year 1930 only 4 interceptions of this nema in potato were made, of which 1 was made in the first three months, January to March inclusive. In 1931 there were 31 interceptions of which 16 were made in the first quarter, and in 1932 there were 10 interceptions of which 1 was made in the first quarter. In the first quarter of 1933 there were 22 interceptions of T. dipsaci in potatoes.

As observed in the material seen here the characteristic symptoms of the disease are definitely but rather shallowly depressed areas. When cut into the discolored tissue is found to be limited to the surface eighth of an inch with occasional pockets extending somewhat deeper. General appearance of the tissue is somewhat similar to the mottled brown of late blight (Phytophthora infestans) except that the latter is likely to be a lighter color if just starting or to extend deep into the tissue if older and dark in color. The nema-infested tissue is frequently invaded by other organisms and the characteristic symptoms largely obscured. In the potato material examined nemas have been sometimes plentiful, sometimes difficult to find, and in general have appeared to be shorter and smaller than they are likely to be in good narcissus material.

Interceptions of potato powdery scab.--Receipt of several interceptions of Spongospora subterranea caused us to examine the records of interceptions of this disease. The number of interceptions per year has been as follows: 1915 - 16, 1916 - 4, 1917 - 0, 1918 - 1, 1919 - 1, 1920 - 4, 1921 - 5, 1922 - 1, 1923 - 6, 1924 - 12, 1925 - 17, 1926 - 12, 1927 - 29, 1928 - 20, 1929 - 10, 1930 - 8, 1931 - 23, 1932 - 22, 1933 (January--March material received in Washington only) - 9. Of the 22 interceptions made in 1932, only 2 came to Washington, the other 20 having been made in San Francisco. This disease has a wide distribution as shown by our interceptions, the country of origin for the past three years being as follows: 1930, Argentina, England (3), Estonia (2), Ireland, New Zealand; 1931, Argentina, Belgium (2), Brazil, Denmark, England (8), Finland, France, Germany, Italy (2), Mexico, Norway, Scotland, Sweden (2); 1932, Argentina (2), China, England (3), France, Germany (2), Holland (2), Italy, Japan (6), Norway (2), Scotland, Tasmania. It will be noted that Argentina and England are the only countries appearing in all three lists. The fact that diseases are thus erratic in their occurrence is a matter of considerable interest. Projects covering a study of the correlation of the increased occurrence of diseases and insect pests with weather and other conditions of preceding seasons are being carried out in several parts of the world. More complete information regarding such correlation would enable inspectors to know what diseases to expect on any given product. This would be of value in intercepting incipient stages of the diseases early in the season.

MARCH INTERCEPTIONS BY PORTS

Interceptions and interception records received in Washington during March were as follows: Baltimore 39, Bellingham 12, Boston 113, Brownsville 32, Buffalo 5, Calexico 2, Charleston 42, Chicago 2, Corpus Christi 6, Detroit 12, Douglas 2, Eagle Pass 3, El Paso 68, Fabens 1, Galveston 19, Hidalgo 1, Laredo 7, Mobile 52, Naco 2, New Orleans 64, New York 254, Nogales 325, Norfolk 74, Philadelphia 212, Port Arthur 1, Portland 8, Presidio 1, San Juan 198, San Ysidro 1, Savannah 11, Seattle 38, St. Paul 2. Of the total of 1,609 interceptions, 882 were of insects and 727 of diseases.

SEATTLE OFFICE HAS NEW QUARTERS

As of April 1, the Seattle office, A. G. Webb in Charge, has been moved to a new address, 540 Federal Office Building, Seattle, Wash.

BELL APPLES LOOK LIKE LIMES

The vigilance that port inspectors must exercise on all occasions is well illustrated by a little incident from the day by day doings at Philadelphia. The ship's officer on an incoming ship reported some limes in stores to the customs official who passed on the information to the plant quarantine inspector. Examination of the so-called limes was made over the protest of the steward against so much inspection, and it was found that though superficially resembling ordinary limes the fruits in reality were bell apples (_Passiflora_ sp.), a known fruit fly host. The Philadelphia inspector remarks that it is undesirable to take too much for granted in ship inspection work.

FOREIGN PLANTS TRY TO CRASH THE GATE

W. H. Freeman, of the New York office, presents a succinct but revealing picture of the part played by the plant quarantine inspector in checking the constant attempts made by ocean passengers to bring plant materials into this country apparently without the slightest thought of the pests that these plants might carry and usually blissfully ignorant of quarantine restrictions.

In passengers' baggage from the S. S. Rex arriving from Italy at New York on March 9, the following varied assortment of plant materials was found by the inspectors: 9 cherry, 46 fig, and 6 quince trees; 8 plum and 3 olive seedlings; 65 grape cuttings; 18 carnation, 9 chrysanthemum, 4 elephants-ear, 20 fennel, 1 rosemary, 4 ranunculus, and 1 sedum plants; 75 apples, 46 oranges, 5 pomegranates, 5 pears, 40 prickly pears, 6 quince, 7 sweet limes, and 2 chayotes.

For the benefit of any one inclined to make light of the pest-carrying possibilities of these small assorted lots, it is noted that the inspection staff found 22 different kinds of diseases and insects on them. Since 12 out of the 21 lots were apparently destined for planting here, thus providing the most favorable conditions possible for propagation of any pests they might carry, the danger of such introductions is obvious.

From another Italian ship, the S. S. Conte di Savoia, arriving on March 16, the passengers' baggage yielded the following: 6 carnation, 50 fennel, 4 fig, and 48 grape cuttings; 2 opuntia stems; 50 unidentified seedlings; 3 bamboo roots; 24 citrus leaves; 150 apples, 200 globe artichokes, 115 oranges, 22 pears, 88 prickly pears, 48 sweet limes, and 51 tangerines.

Here again 7 out of these 15 lots were apparently intended to be planted, and there were found on them 14 insects and diseases.

When one considers that these two cases represent but a minute fraction of the passenger movement into our ports from all parts of the world, all year round, and season after season, this fragmentary but vivid picture is significant. It enables one to view the problem of keeping out pests in better perspective,--a task which thus looms in immense magnitude, perplexing in its details and beset with difficulties. We are subjected to a continual pressure from all sides by plants with their accompanying pests striving to enter our borders, seeking blindly and ignorantly for the most part but at times with insistent craftiness. Against this relentless pressure from without we have as a defense,--the plant quarantine inspector.

DOMESTIC PLANT QUARANTINES

The work of the tomato pin worm (Gnorimoschema lycopersicalla), an insect of economic importance and limited distribution, has been called to the attention of the National Plant Board by this Bureau. This insect has heretofore been injurious in Hawaii, California, and Mexico, and has been discovered more recently in Pennsylvania and Florida. The Bureau makes no recommendation with respect to the possibility of quarantine action.

NEW TERMINAL INSPECTION REGULATION

The recent revision of the Postal Laws and Regulations provides for an alternative procedure for expediting and simplifying the handling of plant shipments for terminal inspection by State inspectors. Heretofore the destination postmaster has been required to send the plants, at the addressee's expense, to a designated terminal inspection point for examination and return. This involved considerable delay and often resulted in damage to the plants. Many State quarantine officers have accordingly asked for authority to make the inspection while the package is en route and before it is delivered to the destination post office.

The new method is outlined in the 1932 revision of the Postal Laws and

Regulations as paragraph 7 of section 596, page 290, which reads: "When desired in order to simplify and expedite the handling of parcels of plant material subject to terminal inspection, the addressee may have the parcels addressed to himself in care of a State plant inspector at an inspection point and arrange with the inspector to have the latter forward the parcels to the addressee, after inspection and passing, upon payment of the forwarding postage which shall be furnished to the inspector by the addressee, or the addressee may have the sender place a pledge to pay the forwarding postage on the parcels, in which case they shall, after being inspected and passed, be forwarded, rated with the forwarding postage, such postage to be collected upon delivery as provided by paragraph 4, section 769. In following the latter procedure the parcels shall be labeled as follows:

"Shipped for (or on a/c)
W. H. Jones,
Ocean Springs, Miss.

From:
Eastern Nurseries,
Savannah, Ga.
Forwarding Postage Guaranteed.
Contents:
____
____

To:
W. H. Jones,
c/o State Plant Inspector,
Biloxi, Miss.

"When forwarding parcels under the foregoing arrangement, the inspector shall first cross out 'c/o State Plant Inspector,' and the name of the post office at the point of inspection appearing in the original address, and insert the name of the post office to which the parcels are to be forwarded for delivery to the addressee upon payment of forwarding postage."

While this paragraph contemplates action by the addressee in requesting the sender to address the parcel to the inspector, the division of classification of the Post Office Department suggests that plant quarantine officers of States which have adopted terminal inspection could themselves make such a suggestion to nurserymen shipping into the State. The nurseryman would then address all plant parcels to the addressee in care of the State plant inspector at the proper inspection point. The parcel would then be inspected and forwarded to the addressee, the forwarding postage being collected from the latter. It would, however, be necessary for the shipper to guarantee such forwarding postage.

The plant quarantine officers of one or two States are reported to have proposed this arrangement to the principal shippers who send nursery stock and other plants into their State. If plant quarantine officers of other States which have adopted the terminal inspection plan wish to work out such an arrangement, information as to its operation may be secured from the Bureau of Plant Quarantine.

TRANSIT INSPECTION

Freight shipments of nursery stock in volume began about March 16, according to observations made by transit inspectors at Chicago. It was noted that about 50 percent of the shipments contained Ribes.

Through the courtesy of the Century of Progress Exposition officials in supplying passes, the transit inspectors at Chicago have been able to check daily on the certification of shipments of trees coming into the grounds. All such shipments thus far have been found to be properly certified and no shipments have come into the grounds which were not previously reported upon by the transportation company concerned.

Assistance in checking mail and express shipments of nursery stock at Albany, N. Y., is being given by Arthur Viall incidental to his regular work on European corn borer inspection and certification.

WHITE-PINE BLISTER RUST

White pines to be used on the grounds at the Century of Progress Exposition at Chicago are being supplied from a native planting in Michigan a hundred miles from any known infection of the white-pine blister rust. The trees were inspected before being shipped and will be carefully inspected on the grounds from time to time throughout the summer. They will then be destroyed at the close of the season.

There have been several shipments of currant and gooseberry plants from such recently infected States as Iowa, Ohio, and Maryland which it has been necessary to return to consignors for the reason that the plants did not fully meet the requirements for movement from infected States, as they were not dormant nor had they been dipped in lime-sulphur solution. The present regulations require either complete dormancy or dipping in order to insure that no blister rust spores are being carried to other States. This is the first season that the States named, as well as Virginia and West Virginia, have been designated as infected, and the nurserymen in those States have not heretofore been affected by the dipping and dormancy requirements.

NARCISSUS BULB PESTS

Narcissus inspectors have often noted that the Chinese sacred lily seems immune from Tylenchus infestation, while Soliel d'Or, on the other extreme, is more likely to be found infested than are other polyanthus types on the same premises. A number of cases in San Diego County, Calif., have recently been found in which the plants of Chinese sacred lily (Narcissus tazetta orientalis) have been found infested with Tylenchus dipsaci as determined by D. G. Milbrath and verified by Dr. G. Steiner of the Bureau of Plant Industry. This is the first record in the latter office of such infestation of orientalis.

PHONY PEACH DISEASE

The Department's announcement under date of February 6, regarding the revocation of Federal plant quarantine No. 67, indicated that, although the primary responsibility for preventing spread of the phony peach disease would hereafter rest with the various States, the revocation of the Federal quarantine did not mean the abandonment of the Department's interest in this disease but that this Bureau would plan to cooperate with the respective State officials in so far as funds and facilities permit.

Considerable thought has been given to the entire subject of controlling the spread of the phony peach disease under present conditions. Although the available evidence indicates that effective protection against the disease might be obtained through complete elimination of peach-borer infested or injured stock, it appears that the great amount of peach nursery stock grown in the South, the large numbers of nurseries involved, and the length of the digging and shipping season, tend to make full supervision of the culling of all such stock impracticable.

To avoid this difficulty, the National Plant Board has recommended that the various States "accept stock from a nursery where no disease has been found by a duly authorized State or Federal inspector within a mile from the nursery, or if infected trees are found within the one-mile zone, all infected trees must be destroyed and all peach nursery stock inspected tree by tree at digging by a State or Federal inspector and all trees found infested by peach tree root borer culled out and destroyed."

The environs of most of the peach-growing nurseries have heretofore been inspected by representatives of this Bureau. The large number of inspections made each year by a very limited personnel did not always allow time for adjusting schedules to meet the dates upon which State inspectors might also have arranged to be at the nurseries and, therefore, in most States the State inspectors have not had opportunity to become as familiar with the methods of inspecting nursery environs for the phony peach disease as would have been desirable. To fill this need, tentative plans are being made to cooperate, in so far as is desired and is possible with the funds and personnel available, in the environs inspections in each State this summer. Possibly next fall there will be opportunities to assist in the development and adoption of improved culling practices to eliminate peach-borer infested and borer-injured stock, and to observe the manner in which such culling practices work out in the different States.

Correspondence is now being carried on with the respective plant quarantine and nursery inspection officials of the phony peach disease infected States with regard to the amount of assistance desired from this Bureau in connection with inspection of the environs of peach-growing nurseries during the coming summer and next fall.

DATE SCALE ERADICATION

Routine inspection, that is, periodic inspection of the infested areas, was cut down in March due to the reduction in the size of the field force. Routine inspection has been carried on since the work was reorganized. The plan, of course, was to locate and eliminate the centers of infestation, and then by systematic inspection locate and eliminate the infestations resulting from the spread. The time inspection should be carried on after the centers of infestation are eliminated, and the distance of possible spread, are matters of judgment based on past records. No definite rules can be laid down because of inspection conditions, etc., in the different areas.

It is planned next fiscal year to recall the experienced inspectors now on furlough and resume routine inspection. If sufficient funds are available, it is probable that this type of work may be completed by the end of that fiscal year.

One important phase of the eradication work which has been carried on for some time is the careful survey to locate unlisted palms and checking of fields where seedling plantings have been dug out. Small infested palms from seed and infested offshoots on dead palm stumps have been found in fields where old infested seedling plantings were supposed to have been eliminated several years ago.

JAPANESE BEETLE AND EUROPEAN CORN BORER

Exclusive Japanese Beetle Work

Arrangements were completed during March for trap storage facilities throughout North Carolina, South Carolina, West Virginia, and Virginia. Central shipping points convenient to the localities to be trapped were then selected in order that full carload shipments might be made to points advantageous from the standpoint of distance of haul, road conditions, speed of freight movement, and freight rates. The first carload of trap equipment left South Norwalk, Conn., on March 21 and arrived at Rocky Mount, N. C., on the morning of March 27. Four government trucks reached Rocky Mount the same morning the car arrived, and the drivers immediately began unloading operations. From this car, set-ups, each consisting of 33 cases (396) metal trap assemblies, 4 cans of bran-mix bait, and 66 bundles (396) rods, were trucked to the following trapping points in North Carolina: Emporia, Virginia, Weldon, Elizabeth City, Greenville, Kinston, Goldsboro, Rocky Mount, and Wilmington. A second car of trap equipment was loaded out of South Norwalk on March 25 and arrived at Durham, N. C., on March 29. The same four government trucks proceeded to Durham and accomplished the unloading of the car on April 1. Trap equipment for similar set-ups as mentioned above were trucked to each of the following

North Carolina localities: Danville and South Boston (one set-up), Virginia, Oxford, Raleigh, Durham, Burlington, Greensboro, High Point, Winston-Salem, Sanford, and Fayetteville. The third car to leave South Norwalk was loaded on March 31 and dispatched to Columbia, S. C.

Featured in the booth of a Delaware tree surgery company exhibiting at the Philadelphia Flower Show was a large, framed painting, 3 by 4 feet, depicting in colors a Japanese beetle approximately 16 inches long, below which on a smaller scale were seven Japanese beetles resting on a rose leaf. A New Jersey insecticide manufacturer exhibited a life history Riker mount of the Japanese beetle. Life history mounts were also shown of the Mexican bean beetle, peach tree borer, tent caterpillar, and Colorado potato beetle. Pamphlets were distributed giving details of the use of arsenate of lead for protection of lawns and golf courses, oleate coated arsenate of lead for foliage protection, and a rotenone and pyrethrum contact spray, all recommended for Japanese beetle control. Recognition was given to the Japanese Beetle Laboratory for the perfecting of the oleate coated arsenate of lead spraying material and the methods of applying arsenate of lead to lawns and golf courses. An interesting bit of information in the pamphlet on coated arsenate of lead is to the effect that "Oleate Coated Arsenate of Lead is different from ordinary Arsenate of Lead, each microscopic particle having a coating of Lead Oleate Soap which makes it palatable to the beetle, thus causing an 80 percent kill as against only a 30 percent kill on foliage sprayed with ordinary Arsenate of Lead." The insecticide firm reported having received many inquiries concerning sprays and lawn treatment for Japanese beetle control.

Distribution of Japanese beetle quarantine literature which has heretofore been accomplished through each State headquarters office will in the future be made through the general headquarters of the project. Mailing lists prepared by the field offices have been forwarded to South Norwalk and are being combined with addresses from other sources. Addresses thus secured have been typed on stencil cards for use in an addressing machine. Forty thousand yellow Japanese beetle quarantine map-posters, 12 by 20 inches in size, were received on March 11. These were sent out in mailing tubes purchased on General Schedule. Franked labels were printed on the addressing machine and these in turn were pasted on the mailing tubes. Distribution of the posters to agents of the Railway Express Agency and the Southeastern Express Company was accomplished through the mailing bureau of the Railway Express Agency in New York City, to which bureau 3,000 copies of the map were supplied via "deadhead" express. Approximately 25,000 copies of the printed Notice of Quarantine No. 48 (9th Revision), with supplemental rules and regulations (11th Revision), were received on March 23. Distribution of the quarantine notices was still in progress at the end of March. Mailing of 15,000 Japanese Beetle Shipper's Guides to interested firms, individuals, and agents of certain common carriers was completed through the district offices early in the month.

Border patrol operations began on March 28 with the establishment of a road patrol post on the principal highway leading south from the District of Columbia-northern Virginia isolated regulated zone. Preparations for the posts began on March 22, when the booths used at last year's stations were moved from their temporary storage sites near their previous locations to the new locations required by the extension of the regulated zones. By March 31 there were nine stations in operation. These were located on U. S. Highway No. 1 at the Fredericksburg, Va., city limits; U. S. Highways Nos. 211 and 50, west of Fairfax, Va.; U. S. Highway No. 340 at the Harpers Ferry, W. Va., bridge; Maryland State Route No. 34 at Shepherdstown, W. Va., bridge; U. S. Highway No. 11 at Williamsport, Md., bridge; U. S. Highway No. 40, west of Cumberland, Md.; U. S. Highway No. 19, south of Mount Morris, Pa.; and U. S. Route No. 40, west of West Alexander, Pa. Each of these stations is manned by one inspector who works eight hours daily. Additional men will be added and the hours each station is operated will be increased as soon as is evident the usual heavy spring movement of quarantined material.

Live adult Japanese beetles obtained from an uncertified greenhouse near Philadelphia were used as an exhibit in connection with the motion pictures "Old Jake Wakes Up," a corn borer film, and "Holding the Japanese Beetle," shown at a men's club meeting in Norwalk, Conn., on March 28. Approximately 350 live Japanese beetles were also collected on March 14 and shipped via express to W. C. O'Kane, Deputy Commissioner, Department of Agriculture, Durham, N. H. Durham is within the Japanese beetle infested zone. Mr. O'Kane desired the beetles for experimental purposes. Since the day on which the latter specimens were collected was cloudy and showery, it was necessary to visit three large ranges of greenhouses before the required number could be obtained. On a bright, sunshiny day the 350 beetles could have been collected in a single heavily infested greenhouse in the Philadelphia section. Adult beetles have been observed in flight in uncertified greenhouses in the vicinity of Philadelphia every month since the disappearance last fall of adults in the open.

Gathering of samples of lead arsenate treated soils in nursery plots and analyses of the samples are approximately one month in advance of last year's schedule. Collection of samples from lead arsenate treated plots of growing plants, heeling-in areas, and coldframes began on February 23. In spite of adverse weather conditions, members of the treating division have been able to supply chemists working under direction of the Bureau's toxological division with an ample supply of representative samples so that their work might progress without interference. There had been gathered up to the end of March a total of 746 samples. Four hundred ninety-eight of these were secured from plots of growing plants, 231 from coldframes, and 17 from heeling-in areas. There still remained to be taken a total of 187 samples. A modification in the metal sampler has been made to lighten its weight and facilitate its dismantling for sharpening and repairs. The remodeled sampler in addition to being lighter is more balanced and easier to use in the field.

Cooperation was again extended by officials of the Pennsylvania

Horticultural Society in segregating certified and uncertified material at the Philadelphia Flower Show held in the Commercial Museum from March 27 to April 1. The Pennsylvania Horticultural Society has been organized 105 years, and this year's show was its 100th exhibition. Many of the 87 exhibitors are classified dealers whose plants and other exhibit material came from certified greenhouses. Quantities of the certified plants, moss, humus, sod, and soil were returned to noninfested greenhouses or shipped to nonregulated territory. An inspector stationed at the show maintained a strict division between uncertified and certified stock and kept accurate check on the arrival and removal of 33,052 plant containers. Frequent observations were made for adult Japanese beetles but none were found. Specimens of 34 other species of insects were noted.

Certification for reshipment from the Japanese beetle regulated zone was required on several consignments of boxwood brought from the Southern States for exhibition at the International Flower Show in the Grand Central Palace, New York City, from March 20 to 25. Commenting on the spring flower show in New York, a Newark, N. J., daily newspaper stated that "The aspect of blooms in a profusion of hues and loveliness growing amid surroundings so closely counterfeiting nature even a Japanese beetle or other crafty pest would assume Santa Claus actually had arrived, is calculated to dissipate the last vestiges of Winter doldrums."

J. S. Stockbridge, field supervisor in insect control, effective March 16 was transferred from South Norwalk, Conn., to Norfolk, Va. In Norfolk, Mr. Stockbridge will assume charge of Japanese beetle inspection and certification work in the isolated regulated zone comprising Norfolk, Portsmouth, and immediately adjacent territory south of these two cities. The Norfolk suboffice is under the supervision of H. N. Bartley, district supervisor at Richmond.

Notice of Quarantine No. 48 (9th Revision), with rules and regulations (11th Revision), effective January 1, 1933, was reprinted verbatim and issued on February 9 by The New York Central Railroad Company and West Shore Railroad as Joint Circular No. 164.

Biology classes in a number of Baltimore, Md., high schools are studying the life history and control of the Japanese beetle. Pupils and students recently obtained literature and specimens for such study from the Baltimore field office.

Three Federal prosecutions for violations of the Plant Quarantine Act arising from shipments of uncertified farm products and nursery stock contrary to the Japanese beetle quarantine regulations were successfully closed during March. On March 20, counsel for the Merchants and Miners Transportation Company appeared before Judge George A. Welsh in the United States District Court at Philadelphia, Pa., and entered a plea of guilty to an information alleging transportation without certification of 35 baskets of apples from Philadelphia to West Palm Beach, Fla. The shipment was intercepted on September 3, 1932, at the Florida destination point by Assistant Plant Quarantine Inspector Merton LeRoy. A form of information and supporting affidavits were delivered to the United States Attorney at Philadelphia on November 22, 1932. The employee of the common carrier responsible for the acceptance of the uncertified apples accompanied the attorney who represented the defendant company at the pleading. The only explanation offered by counsel or by the employee was that the shipment got by through carelessness. A fine of $25 was imposed and Judge Welsh stated that so far as he was concerned the common carrier might require the employee at fault to pay the same. On the following day, March 21, another case was listed for pleading before Judge J. Boyd Avis in the United States District Court held in the new Post Office building at Camden, N. J. The Camden case was against Robert J. Gibbons, who operates at Pemberton, N. J., a mail order business in nursery stock under the name of The Wrens Nest. From some ten or more violations committed by this individual, three typical uncertified shipments intercepted by transit inspectors of the Department on April 20, June 18, and November 11, 1932, were selected and presented in the form of a three-count information to the United States Attorney at Trenton, N. J., on March 9, 1933. The defendant pleaded guilty to the three counts of the information. After the details of the violations had been briefly outlined to the Court, Judge Avis emphasized to the defendant the seriousness of the violations. He stated that while it was not a matter of life or death to the defendant, it might be a question of affecting the livelihood of farmers in uninfested territory. In connection with the conversation, Assistant United States Attorney Isadore Worth brought out the destructiveness of the Japanese beetle in eating his rose bushes and sassafras tree, and Judge Avis remarked about the density of the Japanese beetle in Woodbury, N. J., where he lives. The defendant is quite elderly, and stated that his business is not proving profitable and that he will not carry it on another year. After the matter was thoroughly discussed, the Court stated that he would suspend sentence and place the defendant on probation for six months, during which time Mr. Gibbons will be required to report either in person or by letter to the probation officer. The defendant assured the Court that there would be no further violations as he would personally supervise all his shipments. The third proceedings terminated involved two violations on the part of the Merchants and Miners Transportation Company arising from uncertified shipments of 50 and 355 baskets of apples, respectively, accepted at Baltimore, Md., for transportation via boat to Jacksonville, Fla., on September 2, 1932. Papers were filed in this case with the United States Attorney in Baltimore on November 23, 1932. These shipments were intercepted at Jacksonville, Fla., on September 6 by Collaborator Hubert W. Williams. Counsel for the common carrier on March 28 appeared before Judge William C. Coleman in the United States District Court in Baltimore and pleaded guilty to the two-count information. A fine of $25 on each count and $20.50 costs, or a total of $70.50, was imposed by the Court. These were the first Japanese beetle quarantine violations to come to the attention of Judge Coleman. Their successful conclusion may set a good precedent for any further court action which may be necessary in the District of Maryland. Proceedings are now pending in the Baltimore Federal Court against the two consignors of the shipments involved in the latter proceedings against the transportation company. In each of the three cases closed, the Department was represented by R. W. Sherman, of the South Norwalk headquarters. Mr. Sherman was permitted in each instance to outline to the Court the facts developed by the Department in connection with the interceptions and subsequent investigations.

Specialized Corn Borer Activities

Men engaged in survey work to determine the extent of demands for Federal inspection required by shippers in the formerly regulated corn borer infested territory in conformity with State quarantine orders met in conference at the South Norwalk headquarters on March 8. Situations encountered in the various surveyed sections were discussed. After the probable requirements for Federal inspection were summarized, the total territory affected by State quarantine regulations was subdivided into areas which could conveniently be served by single inspectors. Territories assigned are as follows: Eastern Michigan, western Michigan, northern Indiana, southern Indiana and southwestern Ohio, northern Ohio, southeastern Ohio and West Virginia, western Pennsylvania, eastern Pennsylvania, New Jersey, southeastern New York and Fairfield County, Conn., western New York, northeastern New York, and the State of Connecticut other than Fairfield County. Inspection and certification in the rest of the New England States will be taken care of by inspectors working from the Boston and Springfield, Mass., field offices.

Practical control measures for the European corn borer were during February and March brought to the attention of farmers on the lower Del-Mar-Va Peninsula by State officials of Maryland and Virginia. Corn borer infestations have been found in sections of the peninsula during the past two seasons. Motion pictures illustrating the life history and measures recommended for control of the pest were shown at various meetings held throughout the affected farming regions. Considerable control information was also brought out in discussions following exhibition of the films. Most farmers in the infested districts are well equipped with tractors and plows, with which they may perform the clean cultivation necessary for suppressing an individual infestation. Many corn growers, however, top their corn and hold their stalks for fodder until after emergence of the corn borer moths. Considerable educational work may be required to change these practices to conform to clean-up measures necessary to destroy overwintering borers.

Samples of field corn intended for shipment to the World's Corn Show to be held at Regina, Saskatchewan, Canada, in June 1933, were heat treated at the central district headquarters in Springfield, Ohio. Each sample was composed of 10 ears. Of 59 samples treated, 44 were grown in Indiana, 10 in Ohio, 3 in Michigan, and one each in Wisconsin and Pennsylvania.

MEXICAN FRUIT FLY

The host-free period became effective this season in the three counties under quarantine on March 1. Under normal conditions citrus trees blossom in February and March, and the fruit begins to ripen in September and has heretofore been practically all harvested by February. Thus, if all trees are thoroughly cleaned of fruit by the end of February, there is no fruit available for oviposition by any female flies that may be in the Valley and the great majority will die before fruit begins to ripen in the fall. Growers are required to go over their trees at the end of the harvesting period and remove all ripe and off-bloom fruit. Since it is practically impossible to see all of this scattering fruit, the groves are checked behind the growers by the inspectors. In order that this work may be completed as rapidly as possible with a corresponding lengthening of the host-free period, crews of laborers are employed to search the trees under the direct supervision of the inspectors. Where it is evident that the owner has made an honest effort to clean the trees of fruit, the laborers garner any occasional overlooked fruit and destroy it. If it is evident that the owner has not made a real effort to clean the trees, the laborers are withdrawn and the owner is required to reclean the grove. This tree-to-tree inspection was started in a small way in February as owners notified the inspectors that their groves were ready. It was started in earnest on March 1, and was completed in about three weeks. It was necessary to closely examine approximately three and one-half million trees in this work. The inspection was doubly difficult this season on account of the enormous amount of off-bloom fruit which was on the trees. A severe frost was experienced in March 1932, while the trees were in full bloom. As a result of the shock, many trees continued to bloom all season. Many of the trees had several distinct settings of fruit varying in size from a pigeon egg to that just beginning to ripen. Many of the groves had a full crop of "off-bloom", and some difficulty was experienced in prevailing on the owners to remove this fruit. The greatest difficulty was encountered in those groves in which the fruit was beginning to color. However, all groves were cleaned peacefully with the exception of six small patches in Willacy County. These were noncommercial plantings from which the owners refused to remove the off-bloom fruit. These cases were turned over to the State for action. The Commissioner issued an order condemning the fruit, and the State forces cleaned the fruit from the trees and destroyed it.

During the latter part of the month preparations were made for the application of a poison spray to the bearing trees of the Valley. Requisitions were written out for each grove, supply depots were arranged for, all sprayers used in the last application were cleaned and repaired, and everything gotten in readiness to start on the 1st of April.

PINK BOLLWORM

The eradication of wild cotton in southern Florida has been continued in the three areas mentioned in the last News Letter, namely, on Cape Sable, Key Largo, and the west coast.

On Cape Sable the cleaning of the area referred to as the marl prairie has been completed. Some 340 acres were cleaned, from which 178,650 large mature plants and 70,650 seedlings were removed. This was the most accessible wild cotton occurring in that section. The clean-up crews are now engaged in removing the wild cotton along the canals near Flamingo.

On Key Largo 29 acres were cleaned for the second time, 600 mature, 6,310 seedling, and 2,655 sprout plants being removed. From 78 acres cleaned for the first time 30,607 mature and 11,045 seedling plants were removed. The majority of these came from a large colony discovered at Point Charles, near the Rock Harbor post office. When Key Largo was first cleaned last summer, Point Charles was cut off from the main key by water, and at that time it was thought to be a separate key. This accounts for the large amount of wild cotton found there at this time.

On the west coast the second cleaning of Hillsborough County has been completed, several additional new colonies having been discovered and cleaned at this time. In addition to the above county, clean-up has gone forward in Lee and Manatee Counties. Considerably more cotton has been located in Lee County than was expected when the work was begun in February. Due to the numerous keys and bays along the coast line it has been necessary to make a very intensive survey so as to be sure that all of the wild cotton is located. Small acreages of cotton were removed from some 16 different localities in this county during the month, and from 10 different locations in Manatee County.

In connection with the above clean-up, bolls from the wild cotton are being inspected from time to time, so as to secure as much information as possible on the infestation of wild cotton. From Hillsborough and Manatee Counties 1,408 bolls were inspected, 690 from Lee County, and 350 from Key Largo, all with negative results. On Cape Sable 50 bolls were inspected, from which 23 pink bollworm larvae were taken; however, infestation was previously known to exist in this area.

The finding of a pink bollworm larva on March 3 in the blooms that are examined daily from the cotton plots at Chapman Field, was mentioned in the last News Letter. Since then 10 additional larvae have been found, the last one being on March 24. These larvae have all been taken from blooms from Plat No. 2. This would seem to indicate that the infestation is most likely resulting from overwintering larvae in the soil.

The hotbed cotton at Presidio, in the Big Bend of Texas, has made very satisfactory progress. By the end of the month some of the first planted cotton was sufficiently large to begin transplanting to the field plots. Approximately 100 plots will be planted, extending from Polvo, about 20 miles down the river from Presidio, to Ochoa, about 20 miles up the river from Presidio. Some 200 plants are being placed in each plot. A 375-gallon water tank has been mounted on a truck, and as each plot is set out it is well watered. After the soil has dried sufficiently it is cultivated, and a small amount of nitrate of soda applied to stimulate the growth of the plants. Some 14 plots have already been transplanted, and apparently the cotton is going to continue growing very well.

The ginning season has finally been completed, and practically all of the gin plants and premises have been thoroughly cleaned. During the 1932 crop season some 179,000 bales of cotton were ginned in the regulated area, which is about 32 percent less than the production in the 1931 crop. A company which owns a number of gins has already announced that it will shortly employ a crew to begin overhauling its plants in preparation for the coming season's crop. This is much earlier than such work usually begins.

Preparations for the coming crop are now actively under way, considerable acreage already having been planted in some sections. From present indications there will be an increase in cotton acreage in practically all sections of the regulated area. There seems to be a departure from the general farming practice this year in that some of the acreage is being "planted dry"; that is, the seed is planted in dry ground with irrigation to be applied later to make it germinate. This is partly due to the inability of some farmers to pay delinquent water charges pending the granting of new crop loans. Where a farmer has a large acreage this practice is of advantage in that all of his crop germinates uniformly.

Field inspection has been continued in the Thurberia weevil area during the month, but with no further signs of infestation being found. In addition to the field inspection, over 6,000 bolls were inspected at the Tucson laboratory, also with negative results. Practically all fields in the entire area were inspected, and the work hereafter will consist of bollie inspection.

Laboratory inspection at the various locations has gone forward satisfactorily. No signs of infestation were found in any of the material inspected during the month.

PREVENTING SPREAD OF MOTHS

The State of Pennsylvania has established a quarantine on account of the gipsy moth, effective March 15, 1933, in that part of the State in which this insect has been found and adjacent areas in which there is likelihood of present or early future infestation. The area affected by this quarantine includes 10 townships and 2 cities in Luzerne County, and 7 townships and 1 city in Lackawanna County. Articles which cannot be moved from the regulated area without certification by an inspector include nursery and ornamental stock, forest products, and surface stones. There are also regulations governing the storage of freight cars on sidings to make sure that the insect is not carried by this means to points outside of the infested area.

During March, a force averaging 225 laborers, employed by the Pennsylvania State Department of Agriculture and working under the direction of Federal supervisors, was engaged in cutting and burning of tree growth in the heavily infested area in Pennsylvania. By the first of April over 700 acres of brush had been cut and burned in this area since clean-up work was started on January 16. From time to time laborers who have shown more than usual interest and ability in their work have been utilized in treating gipsy moth egg clusters with creosote. These men are divided into crews supervised by Federal agents thoroughly experienced in the work and have been detailed to this type of work in different settlements in the generally infested area in order to complete the creosoting before hatching takes place.

Two agents have continued plotting the woodland areas on maps in the townships in Pennsylvania where it is expected work will later be required.

Scouting work was carried on as usual in the Barrier Zone in the southwestern part of Massachusetts and the northwestern part of Connecticut, and progress has been made considering the limited number of men available.

Work was completed during the month at this office on material to be exhibited at the Chicago Century of Progress Exposition. This was so arranged that it could be shown in conjunction with the Japanese beetle exhibit, as previously planned at a conference at South Norwalk. This material was not prepared as a finished product but as suggested matter to aid those in Washington who are to prepare the finished exhibit. Final preparations are being made in Washington so that all sketches, maps, etc., from this project and the Japanese beetle project may be combined in a uniform manner. The exhibit consisted of a large map approximately 4 feet by 4 feet 4 inches which showed in a general way the topography of the Northeastern States, the Barrier Zone, the two quarantined areas, the present known gipsy moth infestations, and those that have been exterminated. In the lower right-hand corner of this large map was inserted a small map of the United States to illustrate the relatively small area of the United States that is infested with the gipsy moth. To accompany this map, eight sketches were prepared illustrating different phases of work in the gipsy moth project; namely, scouting, creosoting, clean-up work, spraying, nursery inspection, stone and quarry inspection, Christmas tree inspection, and inspection of forest products. A large Riker mount was also prepared showing the life history stages of the gipsy moth. The large map was so prepared that the sketches and Riker mount might be inserted in it, thus giving a complete picture of the gipsy moth project and the results accomplished.

In Vermont, a location has been chosen at West Rutland for setting up the weather station equipment this spring which previously has been operated at Shelburne, Mass. With the establishment of a permanent weather station at Greenfield, the station formerly maintained at Shelburne will not be necessary. The location at West Rutland will fill in quite a large gap between Greenfield and Northfield, Vt., from which we have not obtained wind-dispersion records previously.

Twelve de luxe type trucks were delivered at Greenfield on March 30. After being equipped for field use they were assigned to quarantine inspectors to replace cars that are worn out.

In accordance with a request received from the Bureau of Entomology, quarantine inspectors and field supervisors of this project have been instructed to be on the lookout for occurrences of the European beech scale which is now known to be present in certain restricted areas in Maine, New Hampshire, and Massachusetts.

The records so far obtained from the survey being carried on by the quarantine inspectors of the brown-tail moth distribution beyond the quarantine line show a definite spread of this insect in Maine northeast of the present quarantine line, and in New Hampshire north and west of the present quarantined area, including several towns in Vermont. This survey work has not yet been completed. Reports have been received that the infestation in the southwestern part of Maine, including York and Cumberland Counties, and the southern parts of Oxford and Androscoggin Counties, are more heavily infested than usual. There have also been reports of heavy infestation as far east as Castine, Maine, with a very heavy infestation at Rockland. There are very heavy infestations in the older infested section of New Hampshire.

There has been a decided change in the methods of marketing nursery stock at retail and there are strong indications that still further changes will be made. In a way, the changes which have taken place in marketing nursery stock are comparable to those which have been made in the marketing of numerous types of food products. In the past, numerous food products were sold in bulk to retailers to be measured out as called for to purchasers. In the same way, nursery stock was sold almost exclusively in bulk to dealers or stores, and even retail orders shipped from nurseries were sent out in what might be called bulk packages; i.e., there were no attempts made to treat individual specimens as units. In the last year or two, the development of package shipments has been on the increase and nurserymen are vying with one another to create attractive package goods. Changes in marketing stock have been forced on nurserymen because of great increases in the amount of stock sold at department and other stores and also because of exceedingly keen competition. The old-time preparation of stock with a small amount of moist moss around the roots was not satisfactory for store trade. Such stock placed on display dried out rapidly and the purchaser was very apt to express dissatisfaction with the results obtained from planting. Much progress has been made by nurserymen in perfecting packages and packing material so that now stock intended for store trade is kept in almost perfect condition for a considerable time even though it may be on counters in heated stores. The preparation of package stock has extended even to perennials and some other plants commonly not sold in stores because of their perishable nature. This spring it has been noted at a number of the nurseries that they are making greater attempts to sell stock closer at hand than has been the practice for years. Formerly, many nurseries spent large amounts of money for catalogues and advertising in trade papers, and as a result many of their orders came from points at considerable distances from the nurseries themselves. Smaller amounts of money have been spent in the last year or so for these types of advertising and the nurserymen have been endeavoring to dispose of as much stock as possible directly to customers from selling stands located at the nurseries. By this method their costs are reduced considerably as they are able to devote less time to packing, and also there are no expenses involved for crates and packing materials.

Some of the nurseries were affected adversely by the bank holiday which was declared early in March. Coming as it did almost at the height of the ordering season when many of the nurseries customarily receive numerous orders each day, it deterred people from ordering stock and apparently the delay has caused many to lose enthusiasm, and as a result the flow of orders to the nurseries has not been resumed in its former volume.

Reports have been received from a number of the inspection districts which show that the shipments of different types of products, particularly forest products, have been decreased and delayed by the very inclement weather since the first of the new year. In the northern sections of the quarantined area there have been heavy snowfalls which blocked many of the side roads and made it impossible for owners to move such materials as pulpwood. In other districts much rain coupled with some snow and alternate freezing and thawing has left roads almost impassable because of mud, and therefore it has not been possible for owners to reach woodlots to move forest products which had been cut and left there awaiting shipment. In some sections also the digging of nursery stock has been delayed by the presence of considerable frost in the ground or by the fields being covered with water so that it was impossible to dig. It has been reported that because of wet grounds the digging season was delayed more than a week in some sections.

Two shipments of rather unusual nature have been made recently from points in New Hampshire to a Canadian destination. Both of these shipments consisted of round pebbles which were reported as being about the size of a baseball. One lot came originally from France and had been used for a number of years within steel revolving cylinders to crush mica into powder. These were being sent to Canada to be used there for the same type of work. The other shipment consisted of similar pebbles which originated in New Hampshire and were to be used in the same manner for grinding feldspar. The powder from this latter material produced in that way is used in manufacturing porcelain. In both cases the stones were naturally produced, being collected probably from river beds. Only particular types of pebbles characterized by extreme hardness can be used for this purpose.

A call was recently received for inspection of an evergreen bough lot in the lightly infested area of southern Vermont. The district inspector examined the lot and found there was no evidence of gipsy moth infestation on the lot or in the immediate vicinity. The boughs, which were fir balsam, were then cut and baled and certified for shipment. This shipment, comprising 10 tons of boughs, was consigned to Jacksonville, Fla. It is understood that they were to be dyed or colored by some process at Jacksonville, and to be used or sold for decorative purposes. This is the first incident of any sizable shipment of evergreen boughs at this season of the year, and it may possibly be the starting of a new industry which might have considerable effect on the volume of evergreen bough lot inspection.

Since the Federal Government withdrew from New Jersey at the close of the fiscal year 1932, a small crew of gipsy moth experts has been maintained by the State of New Jersey for the purpose of check-up work around old infestations. In February 1933, a report was received from the New Jersey gipsy moth office that while doing intensive scouting work at and in the vicinity of an old colony site in Mendham, on the Randolph Township line, a new fertile gipsy moth egg cluster was found. This egg cluster is in the southeast corner of Randolph Township near the point where the townships of Mendham, Morristown, and Randolph meet. Prior to this, the last live gipsy moth infested site found in New Jersey was the one discovered in Piscataway Township in May 1929. Since the finding of the egg cluster in February, intensive scouting has been continued in an area of about a square mile surrounding this infestation, and early in April a small gipsy moth colony, comprising 19 new and 9 old egg clusters, was located approximately one-quarter mile from the single egg cluster previously found. The infestation is located in very rough, ledgy country. Approximately one acre is infested and practically all egg clusters found to date were deposited on rocks and ledges. This infestation probably resulted from local wind spread in 1927 from an infestation found in Mendham during that year. The egg clusters are small in size and from the low rate of increase it appears that this infestation has increased rather slowly. The finding of these infestations emphasizes the value of expert men in doing check-up work after large infestations are considered eradicated.

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